EXPLANATION OF SIGNIFICANT DIFFERENCES

Site Name and Location:

Northwest Transformer/Mission Pole Superfund Site
Whatcom County, Washington

Lead and Support Agencies:

Lead Agency - U.S. Environmental Protection Agency (EPA)
Support Agency - Washington State Department of Ecology (Ecology)

Statute that requires Explanation of Significant Differences (ESD):

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Section 117(c) and National Oil and Hazardous Substances Contingency Plan (NCP), Section 300.435(c)(2)(i).

Introduction

The remedial action at the Northwest Transformer Mission/Pole site in Whatcom County, Washington, is nearly complete. The work is being performed in accordance with the Amended Record Of Decision (ROD) dated September 30, 1991, and the Consent Decree (CD) for Remedial Design/Remedial Action (RD/RA) entered January 15, 1992, with one significant difference. Since Section 117(c) of CERCLA requires that an Explanation of Differences be published when any remedial action is taken which differs in any significant respect from the Record of Decision for the site, the purpose of this document is to inform the public that the final two piles of excavated soil containing 53 and 70 parts per million Polychlorinated Biphenyls (PCBs), respectively, will be disposed of at a hazardous waste landfill rather than by incineration.

This document also discusses the results of the Environmental Protection Agency's (EPA) reassessment of the selected remedy for groundwater (which was and remains no further action) in light of sampling results and the apparent removal of the source of groundwater contamination during remediation.

Summary of Site History, Contaminants, and Selected Remedy

The site consists of approximately 1.6 acres in Whatcom County, Washington, which was used from 1958 to 1985 by Northwest Transformer, Inc. for a transformer repair and salvage operation. In the course of these activities, soils and a barn on-site were contaminated with polychlorinated biphenyls (PCBs). EPA conducted a removal in May 1985 during which transformers, drums, containers and soils were removed for off-site disposal. The

most significant contamination was found in the southeast portion of the site in the vicinity of an old dry well or seepage pit.

The site was listed on the National Priorities List in 1985, after which EPA conducted a Remedial Investigation/Feasibility Study (RI/FS) to determine the nature and extent of contamination and evaluate cleanup alternatives. The RI/FS demonstrated that PCBs remained on site in soils at levels which, if left unaddressed, posed an unacceptable risk to public health and the environment. On September 15, 1989, EPA selected in situ vitrification (ISV) as the remedy for soils at the site and required additional study of groundwater and the barn at the site. However, since ISV was an innovative technology and not yet commercially available, the ROD required that a treatability study (TS) be done to test the remedy before attempting full-scale implementation.

At the time the ROD was signed, the NW Transformer Company was out of business and could not perform the necessary work. Their customers, who are also Potentially Responsible Parties (PRPs) under the law as generators of hazardous wastes, agreed to conduct the treatability study under an Administrative Order on Consent signed in February 1990.

The TS was formally completed in April of 1991, after successfully demonstrating that ISV would be effective for the contaminants and conditions at the site. However, the TS also revealed that the unit cost of ISV was several times higher than the ROD estimate had been, due to high mobilization costs, an increase in the vendor's price for ISV, and other factors. The availability of a full-scale ISV unit was also identified as a problem, since the vendor had yet to perform a successful full-scale test of ISV due to scale-up problems.

In response to those concerns and PRP requests, EPA agreed to allow the PRPs to conduct a Remedial Design Soil Sampling Program in February, 1991, to better characterize the soil contamination. Based on the sampling, the PRPs determined that the extent and level of soil contamination was less than the RI had shown. Based on that information, the treatability study and the problems with ISV, the PRPs argued in favor of a change to the selected remedy for soils. The PRPs also proposed to forgo detailed characterization of the barn in favor of removal and disposal at an approved hazardous waste disposal facility in conjunction with soil remediation.

On September 30, 1991, after consideration of public comment and with Ecology concurrence, EPA amended the 1989 ROD to change the remedy for soils and select final remedies for the barn and ground water. The amended remedy for soils and the barn consisted of excavation, removal and disposal of soils containing 1 or more ppm PCBs. Soils with 50 or more ppm were to be disposed of by incineration, while soils with less than 50 ppm PCBs were to be landfilled at an approved hazardous waste

facility. The final outcome of the selected remedy was conditional: if all soils with ≥ 1 ppm down to 15 feet and all soils ≥ 10 ppm below 15 feet are shown to be removed, no further site restrictions will be required; if some soils between 1 and 10 ppm are shown to remain near the surface, a fence and long-term maintenance and monitoring program will be required.

For Groundwater, the original 1989 ROD selected only monitoring since the RI/FS had not fully characterized the groundwater. Three rounds of sampling were conducted in off-site and on-site perimeter wells and no PCB contamination was detected through August 1991. The amended ROD called for continued monitoring during RD/RA, after which, if no PCBs were detected, no further action would be required for groundwater.

Remedial Design was completed in early March, 1993, and on-site preparations for Remedial Action began March 15, 1993. By the end of April the barn had been removed and excavation of contaminated soil was proceeding as planned and thought to be mostly complete. However, the extent of contaminated soil in the deeper area of the seepage pit turned out to be much greater than RD sampling had revealed. Instead of 15 feet below the surface, the excavations eventually extended 42 feet below the surface before all contamination above cleanup levels was removed.

As of December 17, 1993, all contaminated material above cleanup levels had been excavated and was in the final stages of off-loading and disposal. Over 4,000 tons of soil contaminated with 50 or less ppm PCBs has been landfilled at an approved hazardous waste facility. Using the average concentration of 20 ppm, approximately 166 lbs of PCBs have been landfilled (the basis for this value and other calculations are given fully in the administrative record and summarized on Attachment A). Approximately 265 tons of soil contaminated with 50 or more ppm PCBs have been sent to an off-site incinerator for disposal. About one-third of the soils contained in excess of 250 ppm PCBs with hot spots as high as 5,000 ppm. Based on the average concentration of 156 ppm, approximately 137.5 lbs of PCBs from soils have been incinerated. In addition to the treated soils, 550 gallons of highly PCB-contaminated water and "scum" (with concentrations up to 39,000 ppm) captured during the excavations have also been treated by incineration in accordance with PCB disposal regulations.

The last two stockpiles of contaminated soil on site are addressed in this ESD. They include about 70 tons of soil at an average concentration of 62 ppm PCBs which are scheduled for off-loading and disposal at a approved hazardous waste landfill between Decmber 22nd and 28th, 1993. These soils represent approximately 8.6 lbs of PCBs.

Following final disposal of stockpiled soils, site grading is scheduled for early January 1994 and planting of grass-seed in the spring.

Description of Significant Differences and Basis for those Differences

A. SOILS

Implementation of the soils remedial action occurred under different conditions than anticipated. The depth of contamination was determined to extend much deeper than originally anticipated (42 feet below ground rather than 12.5 feet) and the levels of PCB were much higher than anticipated. The hot spot contained PCB-contaminated soil with concentrations well over 500 ppm and in one place as high as 5,000 ppm. As a result of these conditions and actions, much more PCB-contaminated soil has been removed and incinerated than was originally anticipated as described below (see attachment A for calculations) and an unconditional soil cleanup has been accomplished.

The volume of soil from the seepage pit contaminated with 50 or more ppm PCBs increased from an original estimate of less than 100 tons to over 530 tons. This ESD covers 70 tons of that material containing an average of 62 ppm PCBs which will be transported to an approved hazardous waste landfill for disposal. The remaining 460 tons of material was screened to segregate relatively clean (based on confirmation sampling) cobbles and gravel from more contaminated soils. After screening the segregated material was tested and disposed of in accordance with the amended ROD. Over 265 tons of soil containing concentrations ranging from 50 to over 5,000 ppm PCBs have been shipped for incineration. The remaining soil, cobbles, and rocks have been disposed of at an approved hazardous waste landfill. Even with this ESD, the cost of the remedial action increased more than $1,000,000 (from about $3,000,000 to over $4,000,000) due to the additional excavations and incineration.

The subject of this ESD is the last two stockpiles (approximately 70 tons) of soil on site which were awaiting disposal as of 12/21/93. One pile contained soil with an average concentration of 53 ppm PCBs and the other 70 ppm PCBs. These two piles contain approximately 3% of the total weight of PCBs which met the ROD threshold for incineration (> 50 ppm), or approximately 8.6 lbs of PCBs out of a total of 257.6 lbs. The stockpiled soils therefore represent a substantially different threat to the environment because of the lower average concentration (62ppm vs several hundred ppm) and maximum concentration (70 ppm vs over 5,000 ppm).

One of the factors which EPA considers when evaluating alternative remedies is the cost effectiveness relative to any incremental increase in protectiveness. In this case, the unit cost of incineration is ten times the cost of landfilling ($1,600/ton for incineration versus $160/ton for landfilling). This tenfold increase is warranted for highly contaminated

material, but becomes less compelling for lower concentrations of PCB-contaminated soils.

EPA is allowing the two remaining piles of soil to be disposed of at a hazardous waste landfill rather than by incineration because of the following factors:

- the extensive excavation and disposal of over 4,000 tons of contaminated soil to date;
- the incineration of 265 tons of contaminated soil including PCB concentrations up to 5,000 ppm;
- confirmation that the remaining 70 tons of soil contain 70 or less parts per million PCBs;
- the ability to protectively dispose of stockpiled soils in a Toxics Substances Control Act permitted facility
- the substantial increase in soil requiring disposal; and,
- the disproportionate cost of incineration of the stockpiled soils relative to the limited benefit gained by incinerating soil at such low concentrations.

As described in the previous section, the Amended ROD provided for unconditional and unrestricted site use if the soil performance standards were met. The Amended ROD also provided for a more limited removal of soils in conjunction with certain institutional controls. During site remediation the PRPs chose to continue to excavate despite the considerable increase in soil volume in an effort to completely attain the performance standards, which they accomplished. Confirmation sampling has shown that once the final contaminated soil stockpiles are removed from the site and disposed of, the site will meet all CD and ROD performance standards for soils. No further restrictions to prevent contact with site soils will be required.

B. Groundwater

During Remedial Design, an additional pair of deep and shallow groundwater wells was placed in the middle of the site (adjacent to and downgradient of the seepage pit). Those wells were sampled along with off-site and perimeter wells 3 times during remedial design. During those sampling rounds no contamination was detected in the off-site or perimeter wells, however, the new shallow well (screened at about 30') was found to contain PCBs at 1-2 parts per billion (ppb), which exceeded both the Maximum Contaminant Level of 0.1 ppb and the practical quantitation limit established for this site at 0.5 ppb.

According to the Amended ROD, since contaminants above the PQL were detected in two rounds of sampling, EPA was required to determine what, if any, further action was necessary for groundwater. As a result, in December 1992, EPA determined it would be necessary to continue groundwater monitoring until completion of the remedial action.

After evaluation of the sample results from the groundwater monitoring program as required by the Amended ROD, EPA has determined that no further action is still the appropriate remedy for groundwater. Since the contaminated soil excavated from the seepage pit was found immediately upgradient from and at the same depth as the one on-site well in which PCB contamination has been found, the Remedial Action for soils is believed to have addressed the source of the groundwater contamination. Periodic groundwater monitoring will be for as long as is necessary to determine with confidence that the source of groundwater contamination has been removed. Once EPA makes that determination, the site will be delisted and no further reviews will be conducted, since the site will be deemed to meet all requirements of the consent decree for a non-conditional cleanup and the NCP requirements for delisting.

Summary of Support Agency Comments

The Department of Ecology for the State of Washington was consulted on this matter. They confirmed that disposal at an approved hazardous waste facility was compatible with the State Dangerous Waste Regulations, Chapter 173-303 WAC, specifically Section 071 which provides for this type of material. A copy of the letter encouraging EPA to approve the PRPs request to dispose of the remaining soils by landfilling is attached. Ecology concurred with the decision to allow landfilling of the final two piles of soil because of the extensive and successful remedial action taken so far, the increased scope of the project and the protectiveness offered by landfilling soils with 70 or less ppm PCBs relative to the substantial cost and limited additional protectiveness offered by incineration in this situation.

Public Participation Activities

A public notice is being published in the Bellingham Herald and the Lynden Tribune. This document and the supporting documents have been added to the Administrative Record.

Affirmation of the Statutory Determinations

The amended ROD and Remedial Action for the Northwest Transformer/Mission Pole Superfund Site remains protective of human health and the environment, complies with Federal and State requirements that are applicable or relevant and appropriate to this remedial action, and is cost effective.

Carol Rushin, Chief
Superfund Remedial Branch

12-22-93
Date

NORTHWEST TRANSFORMER (MISSION/POLE) SITE
ESD BACKGROUND DATA

1. Stockpiled Soils Addressed in this ESD

A) Approximate weight of 2 uncommingled stockpiles: **70 tons**

B) Average PCB concentration in subject stockpiles P0920-5 (70 ppm) and P0920-6 (53 ppm): **62 ppm**

C) Estimated weight of PCBs in subject stockpiles: **8.6 lb**
-Based on 70 tons at 62 ppm and 2 x 10^{-3}lb PCB/ton soil

2. Soils Contaminated with 50 or more ppm PCBs

a) Approximate total weight of excavated (unscreened) soil with ≥50 ppm PCBs: **530 tons**
-Based on:
- o 93 tons sent to APTUS incinerator last June
- o 70 tons in uncommingled stockpiles PO926-5 AND -6
- o 367 Tons of commingled soil in stockpile and rolloffs prior to screening

b) Approximate weight of rocks and cobbles screened out of excavated soil: **265 tons**
[this material has been tested after screening and shown to contain an average of 30 ppm PCBs. It is being disposed of at a TSCA-approved landfill]

c) Approximate weight of soil with ≥50 ppm PCBs sent to APTUS incinerator: **265 tons**
-Based on:
- o 93 tons sent to APTUS last June;
- o 172 Tons of commingled soil remaining in stockpile and rolloffs after screening out rocks and cobbles.

d) Estimated average PCB concentration of excavated, commingled soil with ≥50 ppm PCBs prior to screening: **156 ppm**
-Based on data in Table A-4 of Perkins Coie letter dated October 13, 1993

e) Estimated weight of PCBs in excavated, commingled soil with ≥50 ppm PCBs: **165 lb**
-Based on 530 tons at 156 ppm and 2X10^{-3}lb PCBs/ton soil

f) Estimated weight of PCBs in soil sent to APTUS: **137.5 lb**
-Based on 265 tons at 156 ppm and 265 tons at 30 ppm

3. Soils Contaminated with less than 50 ppm PCBs

a) Approximate weight of soil landfilled: **4,150 tons**
-Based on:
- o 2,100 tons sent to Arlington (6/93)
- o 1,200 tons sent to Arlington (7/93)
- o 390 tons sent to Arlington (10/93
- o 66 Tons >1/4-inch gravel screened out of commingled soil stockpile and rolloffs
- o 324 Tons surficial scrape and final site cleanup
- o 70 Tons in uncommingled stockpiles PO926-5 and -6 (based on this ESD)

b) Estimated average PCB concentration in landfilled soil landfilled: **20ppm**

c) Estimated weight of PCBs in landfilled soil: **166lb**
-Based on 4,150 tons at 20 ppm and $2x10^{-3}$lb PCB/ton-soil

4. Costs

a) Approximate average cost for soil transportation/disposal at APTUS incinerator: $1600/ton

b) Approximate cost for soil transportation/disposal at Arlington landfill: $160/ton

c) Incremental cost per ton for incineration versus landfilling = $1600-160 = $1440/ton

d) Incremental cost of incinerating versus landfilling 265 tons of <1/4-inch soil with ≥50 ppm PCBs = 265 x $1,440 = $382,000

STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

P.O. BOX 47600 • Olympia, Washington 98504-7600 • (206) 459-6000

December 16, 1993

Mr. Tim Brincefield
Superfund Project Manager
U.S. EPA HW-113
1200 Sixth Avenue
Seattle, WA 98101

Dear Mr. Brincefield:

RE: NW Transformer Mission Pole Site/Disposal of PCB Contaminated Soils

Based on our telephone conversation this morning and from previous contacts with Puget Power on this subject, I understand that PRPs are requesting EPA's permission to dispose of approximately 70 tons of soil contaminated with PCBs. This soil comprises the last portion of several thousand tons of the same contaminated soils that were excavated earlier from the site and were shipped in bulk off-site to a high temperature incinerator.

The PCB concentrations range from 53 to 70 ppm. Incineration cost including transport fees, which are over $1500 per ton, whereas land disposal at an approved out-of-state RCRA or TSCA facility would amount to $160 per ton.

The Department of Ecology's Toxics Cleanup Program believes, this request is not unreasonable, nor does it seem to be incompatible with the State Dangerous Waste Regulations, Chapter 173-303 WAC, specifically Section 071 (excluded categories of waste) which provides for this type of material.

I would thus encourage EPA to approve Puget Power's request so that this site can be restored soon, and as close as possible to its original condition.

If you have questions, please call me at (206) 407-7248.

Sincerely,

Michael H. Ruef

Michael Ruef
Project Manager
Toxics Cleanup Program

MHR:saw

cc: Gary Reid, Puget Power